**Read**: Chapter 53 Community Ecology

**Watch**:

*Bozeman Videos – Communities, Niche, Biodiversity, Cooperative interactions, Ecological Succession*

**Community Objectives**

1. Explain how competition contributes to competitive exclusion, resource partitioning, and character displacement.
2. Explain how predation contributes to changes in coloration (aposematic and cryptic) and the evolution of mimicry (batesian and mullerian).
3. Provide examples of mutualism and parasitism, and explain how your examples fit those definitions.
4. Why are ecologists unsettled on whether or not there are any truly commensal interactions among organisms?
5. Explain the concept of facilitation.  Provide an example facilitator species and why it fits that definition.
6. What is biodiversity?  How is it measured?
7. How do keystone species contribute to the tropic structure of an ecosystem?  Provide examples of the effects of each.
8. Describe the phenomena of disturbance and succession.
9. Describe the process of primary succession.
10. Describe the process of secondary succession.
11. Describe how ecosystems provide organisms with their energetic and matter requirements.
12. Explain how changes in climate can influence primary productivity in an ecosystem.
13. Compare food chains and food webs.
14. What does it mean by “trophic structure” of a community? Give example
15. Explain how modeling of the trophic structure of an ecosystem can be used to make predictions about the effects of changes in biotic and abiotic factors on that ecosystem. Describe the strengths and limitations of this approach.
16. How do “bottom-up” or “top-down” controls on community organization differ?
17. Provide examples to demonstrate how human activities have impacted ecosystems on local, regional, and global scales. Describe the causes, and effects of these impacts, and discuss possible avenues of mitigating these impacts.
18. Provide examples of species that have been driven to extinction by human activities.
19. Explain how interactions among populations affect the pattern of species distribution and abundance.
20. Explain how competition, parasitism, predation, mutualism, and commensalism can all affect the distribution and abundance of populations. Provide examples of each effect.
21. Provide examples of how species-specific and environmental catastrophes, geological events, and the sudden influx/depletion of abiotic resources or increased human activities can affect species distribution and abundance.
22. What properties does a population have that an individual does not?
23. Explain how introduced species (invasive) can disrupt the structure of an ecosystem. Provide examples (i.e. Dutch Elm Disease) to support your answer.
24. Explain how the genetic diversity present in a population is related to the resiliency of the population and its ability to respond to changes in the environment.
25. Explain why populations with limited genetic diversity are at greater risk of extinction. Provide examples to support your answer.
26. Describe how keystone species, producers, and limiting abiotic and biotic factors contribute to maintaining the diversity of an ecosystem.
27. Provide examples of how disruption to keystone species populations can trigger disproportionately large-scale changes to the structure of an ecosystem.
28. Describe two hypotheses that explain why species diversity is greater in tropical regions than in temperate or polar regions.
29. How does an island’s size and distance from the mainland affect the island’s species diversity?